Overview

HPE Synergy Fibre Channel Host Bus Adapters

HPE Synergy Fibre Channel Host Bus Adapters provides high-performance connectivity to HPE Synergy Virtual Connect FC Modules and supports advanced virtualization, enhanced firmware security, dynamic power management and low CPU utilization features.

HPE Synergy Fibre Channel Host Bus Adapters

XXXXXX-**X21** is SKU designation formed by a common six digit part number and a **-X21** suffix that identifies a SKU that is available across multiple server family lines. Refer to the table below to find the SKU suffix that applies to the specific server product line this option can be ordered with.

-B21	-H21	-K21
COMPUTE Server Line	**SPECIALIZED COMPUTE Server Line**	**STORAGE Line**
HPE Cloudline CL2100/CL2200/CL2800/CL3100/ CL4100/CL5200/CL5800 Servers HPE Composable Cloud for ProLiant DL HPE ProLiant BL460c/BL660c Servers HPE ProLiant DL20/DL160/DL180 Servers HPE ProLiant DL325/DL360/DL380/DL385 /DL560/DL580 Servers HPE ProLiant DX360/DX380 Servers HPE ProLiant MicroServer HPE ProLiant for Microsoft Azure	HPE Apollo 35/40/70 Systems HPE Apollo 2000/6000 Servers HPE XL170r/XL190r/XL270d (Apollo 6500) Gen10 Server for BlueData Software HPE Converged System 300/500/700/750 HPE Edgeline Systems and Servers HPE Integrity BL860c i6/BL870c i6/BL890c i6 Server Blades HPE Integrity MC990 X Server HPE Integrity rx2800 i6 Server HPE Integrity Superdome HPE SGI 8600 System HPE Solutions for SAP HANA (TDI)	HPE Apollo 4200 Gen9/Gen10 Servers HPE Apollo 4200 Gen10 LFF Server for BlueData Software HPE Apollo 4510 Gen10 System HPE D2220sb/D2500sb Storage Blade HPE D3000/D6020/D8000 Disk Enclosures HPE Scalable Object Storage with Scality RING HPE SimpliVity 2600 HPE SimpliVity 325/380 Gen10 HPE Storage File Controllers HPE StoreEasy 1460/1560/1650/1660/1860

Overview

Stack HPE ProLiant ML30/ML110/ML350 Servers HPE Synergy 480/660 Systems HPE ProLiant DX170r/DX190r, DX2000 Servers HPE ProLiant DX560 Gen10 server HPE ProLiant DX4200 Gen10 server		Disclaimer: This may not be a complete listing of applicable servers

Standard Features

Models

HPE Synergy 5330C 32Gb Fibre Channel Host Bus Adapter	870828-B21
HPE Synergy 5830C 32Gb Fibre Channel Host Bus Adapter	777456-B21

SKU	870828-B21	777456-B21
Description	HPE Synergy 5330C 32Gb Fibre Channel Host Bus Adapter	HPE Synergy 5830C 32Gb Fibre Channel Host Bus Adapter
Quick install card	✔	✔
Product warranty statement	✔	✔

SKU	870828-B21	777456-B21
Description	HPE Synergy 5330C 32Gb Fibre Channel Host Bus Adapter	HPE Synergy 5830C 32Gb Fibre Channel Host Bus Adapter
HPE Synergy 680 Gen9 Compute Module		
HPE Synergy 660 Gen10 Compute Module	✔	✔
HPE Synergy 480 Gen10 Compute Module	✔	✔

Operating System and Virtualization Support

The Operating Systems supported by this adapter are based on the server OS support. Please refer to the OS Support Matrix at **https://www.hpe.com/us/en/servers/server-operating-systems.html**

Related Option

Please refer to table below for supported synergy interconnect modules:

SKU	870828-B21	777456-B21
Description	HPE Synergy 5330C 32Gb Fibre Channel Host Bus Adapter	HPE Synergy 5830C 32Gb Fibre Channel Host Bus Adapter
Brocade 16Gb/12 Fibre Channel SAN Switch Module for HPE Synergy	✔	✔
Brocade 16Gb/24 Fibre Channel SAN Switch Module for HPE Synergy	✔	✔
Brocade 16Gb/24 PowerPack+ Fibre Channel SAN Switch Module for HPE Synergy	✔	✔
HPE Virtual Connect SE 16Gb FC Module for HPE Synergy	✔	✔
HPE Virtual Connect SE 32Gb FC Module for HPE Synergy	✔	✔
Brocade 32Gb Fibre Channel SAN Switch Module for HPE Synergy	✔	✔

Standard Features

SKU	870828-B21	777456-B21
Description	HPE Synergy 5330C 32Gb Fibre Channel Host Bus Adapter	HPE Synergy 5830C 32Gb Fibre Channel Host Bus Adapter
Support for with ASN1 v.2.8.7	✔	✔
ECC	✔	✔
Forward error correction (FEC)	✔	✔
NVMe over Fibre Channel	✔	✔
PLDM Temp(MCTP)	✔	✔
T10 DIF	✔	✔
T10 Protection Information (T10-PI)	✔	✔
VMWare VVoL	✔	✔
HPE SmartSAN	✔	✔
MCTP	✔	✔
HPE Sea Of Sensors 3D	✔	✔
Support for greater Server Virtualization	✔	✔
Supported with HPE Storage (see HPE SPOCK)	✔	✔
Secure Firmware download	✔	
Link cable beaconing (LCB)	✔	✔
FDMI,	✔	✔
FC Ping		✔
FC Trace Route	✔	✔
Read Diagnostic Parameters (RDP)	✔	✔
Buffer-to-Buffer Credit Recovery (BB_CR)	✔	✔
Virtual Machine ID (VMID)	✔	✔
Server Integration	✔	✔

Active Health System
Supports HPE Active Health System - monitors and records changes in the server hardware and configuration enabling customers to have accurate information that will assist in diagnosing problems and delivering rapid resolution when server failures occur.

NVMe over Fibre Channel
The Fibre Channel Host Bus Adapters are NVMe-enabled to support emerging NVM Express (NVMe) over Fibre Channel storage networks.

Secure Firmware download
These adapters deliver enhanced security via the new secure firmware update feature which protects and ensures the authenticity of device firmware.

T10 Protection Information (T10-PI)
These adapters support T10-PI for enhanced data integrity when connected to T10-PI enabled arrays like HPE 3PAR StoreServ.

Standard Features

Forward error correction (FEC)
FEC is enabled and improved at 32GFC as required by the FC Specification, automatically correcting transmission errors and improving network performance and resiliency

Class-specific Control (CS_CTL)
QoS capability that enables administrators to prioritize storage traffic to meet the needs of critical VM workloads.

Link cable beaconing (LCB)
LED beaconing for ports on both ends of a physical link simplifies cable identification and management.

FDMI,FC Ping, FC Trace Route
Quickly check connectivity to SAN devices and query the switch management server for in-depth details on connected devices.

HPE Sea of Sensors3D
Support for the HPE Sea of Sensors which is a collection of 32 sensors that automatically track thermal activity - heat - across the server. When temperatures get too high, sensors can initiate fans and make other adjustments to reduce energy usage. A significant improvement lies in the ability to apply fan speed increases only to the portion of the system that is rising in temperature, rather than all six fans in unison, which reduces the amount of energy used for cooling.

Read Diagnostic Parameters (RDP)
Identify the source of network and media errors like cyclic redundancy check (CRC) and loss of sync (LOS) by remotely accessing diagnostic information from anywhere in the fabric.

Fabric-assigned Port Worldwide Name (FA_WWN)
Interrupt coalescing (interrupt moderation) groups multiple packets, thereby reducing the number of interrupts sent to the host. This process optimizes host efficiency, leaving the CPU available for other duties.

Fabric-based Boot LUN (F_BLD)
Allow acquiring Boot-LUN information directly from Gen 5 16Gb or Gen 6 32GFCswitch, speeding up deployment of new servers in a SAN environment.

Buffer-to-Buffer Credit Recovery (BB_CR)
Enhance performance and resiliency by automatically recovering buffer credits, which can be lost on long distance and lossy connections with the potential to stall I/O or degrade performance.

Standard Features

Server Integration

The adapter is a validated, tested, and qualified solution that is optimized for HPE servers. Hewlett Packard Enterprise validates a wide variety of major operating systems drivers with the full suite of web-based enterprise management utilities including HPE Intelligent Provisioning and HPE Systems Insight Manager that simplify network management. This approach provides a more robust and reliable networking solution than offerings from other vendors and provides users with a single point of contact for both their servers and their network adapters.

Warranty

Maximum: The remaining warranty of the HPE product in which it is installed (to a maximum three-year, limited warranty).

Minimum: One year limited warranty.

Notes: Additional information regarding worldwide limited warranty and technical support is available at:

https://www.hpe.com/us/en/services.html#

Service and Support

HPE Pointnext - Service and Support

Get the most from your HPE Products. Get the expertise you need at every step of your IT journey with **HPE Pointnext Services**. We help you lower your risks and overall costs using automation and methodologies that have been tested and refined by HPE experts through thousands of deployments globally. HPE Pointnext **Advisory Services**, focus on your business outcomes and goals, partnering with you to design your transformation and build a roadmap tuned to your unique challenges.

Our **Professional** and **Operational Services** can be leveraged to speed up time-to-production, boost performance and accelerate your business. HPE Pointnext specializes in flawless and on-time implementation, on-budget execution, and creative configurations that get the most out of software and hardware alike.

Consume IT on your terms

HPE GreenLake brings the cloud experience directly to your apps and data wherever they are-the edge, colocations, or your data center. It delivers cloud services for on-premises IT infrastructure specifically tailored to your most demanding workloads. With a pay-per-use, scalable, point-and-click self-service experience that is managed for you, HPE GreenLake accelerates digital transformation in a distributed, edge-to-cloud world.

- Get faster time to market
- Save on TCO, align costs to business
- Scale quickly, meet unpredictable demand
- Simplify IT operations across your data centers and clouds

Managed services to run your IT operations

HPE GreenLake Management Services provides services that monitor, operate, and optimize your infrastructure and applications, delivered consistently and globally to give you unified control and let you focus on innovation.

Recommended Services

HPE Pointnext Tech Care.

HPE Pointnext Tech Care is the new operational service experience for HPE products. Tech Care goes beyond traditional support by providing access to product specific experts, an AI driven digital experience, and general technical guidance to not only reduce risk but constantly search for ways to do things better. HPE Pointnext Tech Care has been reimagined from the ground up to support a customer-centric, AI driven, and digitally enabled customer experience to move your business forward. HPE Pointnext Tech Care is available in three response levels. Basic, which provides 9x5 business hour availability and a 2 hour response time. Essential which provides a 15 minute response time 24x7 for most enterprise level customers, and Critical which includes a 6 hour repair commitment where available and outage management response for severity 1 incidents.

https://www.hpe.com/services/techcare

HPE Pointnext Complete Care

HPE Pointnext Complete Care is a modular, edge-to-cloud IT environment service that provides a holistic approach to optimizing your entire IT environment and achieving agreed upon IT outcomes and business goals through a personalized and customer-centric experience. All delivered by an assigned team of HPE Pointnext Services experts. HPE Pointnext Complete Care provides:

- A complete coverage approach -- edge to cloud
- An assigned HPE team
- Modular and fully personalized engagement
- Enhanced Incident Management experience with priority access
- Digitally enabled and AI driven customer experience

Service and Support

https://www.hpe.com/services/completecare

Warranty and Support Services

Warranty and Support Services will extend to include HPE options configured with your server or storage device. The price of support service is not impacted by configuration details. HPE sourced options that are compatible with your product will be covered under your server support at the same level of coverage allowing you to upgrade freely. Installation for HPE options is available as needed. To keep support costs low for everyone, some high value options will require additional support. Additional support is only required on select high value workload accelerators, fibre switches, InfiniBand and UPS options 12KVA and over. Coverage of the UPS battery is not included under TS support services; standard warranty terms and conditions apply.

Protect your business beyond warranty with HPE Support Services

HPE Technology Services delivers confidence, reduces risk and helps customers realize agility and stability. Connect to HPE to help prevent problems and solve issues faster. HPE Support Services enable you to choose the right service level, length of coverage and response time as you purchase your new server, giving you full entitlement to the support you need for your IT and business.
Protect your product, beyond warranty.

Parts and Materials

Hewlett Packard Enterprise will provide HPE-supported replacement parts and materials necessary to maintain the covered hardware product in operating condition, including parts and materials for available and recommended engineering improvements.

Parts and components that have reached their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual, product QuickSpecs, or the technical product data sheet will not be provided, repaired, or replaced as part of these services.

The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by Hewlett Packard Enterprise due to malfunction.

For more information

Visit the Hewlett Packard Enterprise Service and Support **website**.

Technical Specifications

Technical Specifications Table		
SKU	870828-B21	777456-B21
Description	HPE Synergy 5330C 32Gb Fibre Channel Host Bus Adapter	HPE Synergy 5830C 32Gb Fibre Channel Host Bus Adapter
Network Processor	Emulex G6 XE501	Marvell EP2722
Data Rate	2 port, each at 32Gb	2 port, each at 32Gb
Bus Type	PCIe 3.0 x8	PCIe 3.0 x8
Power	<12W	<12W
Temperature	**Operating** 0° to 55°C (32° to 131°F) **Non-Operating** -65° to 85° C (-85° to 185° F)	
Humidity	**Operating** 10% to 90% non-condensing **Non-operating** 5% to 95% non-condensing	

Environment-friendly Products and Approach - End-of-life Management and Recycling

Hewlett Packard Enterprise offers end-of-life **product return, trade-in, and recycling programs**, in many geographic areas, for our products. Products returned to Hewlett Packard Enterprise will be recycled, recovered or disposed of in a responsible manner.
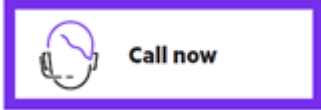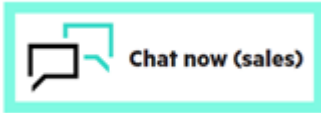
The EU WEEE Directive (2012/19/EU) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the **Hewlett Packard Enterprise web site**. These instructions may be used by recyclers and other WEEE treatment facilities as well as Hewlett Packard Enterprise OEM customers who integrate and re-sell Hewlett Packard Enterprise equipment.

Summary of Changes

Date	Version History	Action	Description of Change
15-May-2023	Version 4	Changed	Removed the 16G HBAs
15-Nov-2021	Version 3	Changed	Service and Support Section was updated
06-May-2019	Version 2	Changed	Update table format, glossary and technical specifications
02-Apr-2019	Version 1	New	New QuickSpecs

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